REMARKS

This Application has been carefully reviewed in light of the Office Action mailed March 20, 2008. Claims 1-56 were pending in the Application. In the Office Action, Claims 1-56 were rejected. Claims 1-56 remain pending in the Application. Applicant respectfully requests reconsideration and favorable action in this case.

In the Office Action, the following actions were taken or matters were raised:

SECTION 112 REJECTIONS

Claims 1-56 were rejected under 35 U.S.C. § 112 as failing to comply with the written description requirement. The Examiner rejection appears to be based on Applicant's failure to specifically point out the support for the amendments made to the claims. *See Office Action* dated March 20, 2008; p. 3. Applicant respectfully traverses these rejections.

Applicant respectfully disagrees that the MPEP recites a requirement that Applicant specifically point out the support for any amendments made to the disclosure. However, in order to expedite prosecution of this application, Applicant shall comply with the Examiner's request. Of the rejected claims, Claims 1, 11, 21, 31, 32, 33, 37, 41, 45, and 46 are independent. By way of example, Applicant will use Claim 1 as a representative claim that recites the previously presented amendments. Claim 1 with the previously presented amendments (underlined) with supporting citation(s) is as follows:

> 1. A method for reducing inter-symbol interference by[1] manipulating a plurality of correlithm objects, comprising:
> establishing a plurality of correlithm objects of a space, the space comprising an N-dimensional space, a correlithm object comprising a point of the space and having a number of bits per dimension[2];
> imposing the plurality correlithm objects on the space to yield a combined point;
> comparing an imposed correlithm object to the combined point; and
> recovering the imposed correlithm object in accordance with the comparison to impose at least one correlithm object token in a shared resource, the at least one correlithm object token formed from a

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[1] *Specification*, at least on p. 16, lines 11-13.
[2] *Specification*, at least on p. 14, lines 9-15.

conversion of the number of bits[3] and configured to reduce the inter-
symbol interference between simultaneous agents during concurrent use
of the shared resource[4].

Support for the respective amendments to Claims 11, 21, 31-33, 37, 41, 45, and 46 can be found at least in the cited portions of the specification as indicated above in relation to Claim 1. Accordingly, Claims 1, 11, 21, 31-33, 37, 41, 45, and 46 fully comply with the requirements of 35 U.S.C. § 112 and no new matter has been added by any of the amendments. Therefore, the Examiner's rejection should be withdrawn.

SECTION 101 REJECTIONS

Claims 1-56 were rejected under 35 U.S.C. § 101 as being directed to non-statutory subject matter. Applicant respectfully traverses these rejections.

Applicant thanks the Examiner for his acknowledgment that "if Applicant overcomes the 35 U.S.C. § 112 new matter rejection, the § 101 rejection will be withdrawn." *Office Action* dated March 20, 2008; p. 3. Accordingly, because Applicant has indicated that Claims 1, 11, 21, 31-33, 37, 41, 45, and 46 fully comply with the requirements of 35 U.S.C. § 112 and does not recite new matter, Applicant respectfully request that the Examiner withdraw the 101 rejection.

Furthermore, MPEP 2106.02 states that a nonstatutory process is defined as a claim that "consist[s] solely of mathematical operations without some claimed practical application" or "simply manipulate[s] abstract ideas…without some claimed practical application." (MPEP 2106.02) (emphasis added). The Federal Circuit has also held that a process claim that applies a mathematical algorithm to "produce a useful, concrete, tangible result without pre-empting other uses of the mathematical principle, on its face comfortably falls within the scope of § 101," *AT&T Corp.* v. *Excel Communications, Inc.*, 172 F.3d 1352, 1358, 50 USPQ.2d 1447, 1452 (Fed. Cir. 1999) (emphasis added).

In the Office Action, the Examiner appears to indicate that independent Claim 1 is directed toward non-statutory subject matter because Claim 1 is purportedly directed toward a mathematical abstraction and/or software *per se* and purportedly recites "nothing more than a

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[3] *Specification*, at least on p. 5, lines 15-17; and p. 21, lines 8-9.
[4] *Specification*, at least on p. 12, lines 20-22; and p. 16, lines 11-13.

judicial exception of mathematical abstraction, involving no physical transformation and no more than the results of mathematical transformation" (Office Action dated July 25, 2007, pages 2-3). Applicant respectfully disagrees.

Applicant respectfully submits that Claim 1, as amended, defines patentable subject matter, has at least one practical application, and fully complies with the requirements of 35 U.S.C. § 101. For example, Claim 1 recites at least one practical application and a useful, concrete, tangible result, namely the practical application of reducing "the inter-symbol interference between simultaneous agents during concurrent use of the shared resource" as recited by Claim 1 (emphasis added). The aforementioned practical application and result are not mere mathematical algorithms, natural phenomena, laws of nature, or a manipulation thereof. Nor is Claim 1 directed toward nothing more than a result of a mathematical operation. Therefore, Claim 1 is in full compliance with the requirements of 35 U.S.C. § 101. Accordingly, for at least this reason, Applicant respectfully requests that the rejection of Claim 1 be withdrawn.

The Examiner also appears to indicate that independent Claim 11 is directed toward non-statutory subject matter. The Examiner states that "[n]o data structure is claimed and no functional program is indicated. Rather, two components and their purposes are disclosed. Lacking function description language, the claim is non-statutory under 35 U.S.C. 101." (Office Action dated July 25, 2007, page 3). Applicant respectfully disagrees. Claim 11 recites "an overlap generator operable to...convert the number of bits to form at least one correlithm object configured to reduce the inter-symbol interference between simultaneous agents during concurrent use of a shared resource" (emphasis added). For at least the reasons indicated above with respect to independent Claim 1, Applicant respectfully submits that Claim 11 recites at least one practical application and a useful, concrete, tangible result, namely the practical application of reducing "the inter-symbol interference between simultaneous agents during concurrent use of the shared resource" as recited by Claim 11 (emphasis added). Accordingly, Applicant respectfully submits that Claim 11 is directed to statutory subject matter.

In the Office Action, the Examiner also appears to indicate that independent Claim 21 is directed toward non-statutory subject matter because Claim 21 purportedly "involves no physical transformation and asserts not more than the results of mathematical operations."

(Office action dated July 25, 2007, page 4). Applicant respectfully disagrees. For example, Claim 21 recites "the at least one correlithm object token formed from a conversion of the number of bits and configured to reduce the inter-symbol interference between simultaneous agents during concurrent use of the shared resource" (emphasis added). For at least the reasons indicated above with respect to independent Claim 1, Applicant respectfully submits that Claim 21 recites at least one practical application and a useful, concrete, tangible result, namely the practical application of reducing "the inter-symbol interference between simultaneous agents during concurrent use of the shared resource." Accordingly, Applicant respectfully submits that Claim 21 is directed to statutory subject matter.

The Examiner also appears to indicate that independent Claim 31 is directed toward non-statutory subject matter because "no data structure is claimed and no functional program is disclosed. Lacking functional description language, the claim only recites the § 101 judicial exceptions of mathematical abstraction and/or algorithm." (Office Action dated July 25, 2007, page 5). Applicant respectfully disagrees. Independent Claim 31 recites "means for recovering the imposed correlithm object in accordance with the comparison to impose at least one correlithm object token in a shared resource, the at least one correlithm object token formed from a conversion of the number of bits and configured to reduce the inter-symbol interference between simultaneous agents during concurrent use of the shared resource" (emphasis added). At least for the reasons discussed above in connection with independent Claim 1, Applicant respectfully submits that Claim 31 is directed to statutory subject matter.

The Examiner also appears to indicate that independent Claims 32, 33, 41, 45 and 46 are directed toward non-statutory subject matter because Claim 32 recites "no more than the §101 judicial exception of an algorithm" and disclose no physical transformation or useful, concrete, and tangible result." (Office Action, pages 6-7). Furthermore, the Examiner also appears to indicate that independent Claim 37 is directed toward non-statutory subject matter because "no physical transformation in the real world and no product of useful, concrete and tangible results is possible." (Office Action, page 7). At least for the reasons discussed above in connection with independent Claim 1, Applicant respectfully submits that Claims 32, 33, 41, 45 and 46 are directed statutory subject matter.

The remaining set of claims depend respectively from independent Claims 1, 11, 21, 31-33, 37, 41, 45, and 46. For at least the reasons discussed above, independent Claims 1, 11, 21, 31-33, 37, 41, 45, and 46 are in condition for allowance; therefore, the remaining set of claims that depend respectively therefrom are also in condition for allowance. Accordingly, Applicant respectfully requests that the rejection of Claims 1-56 be withdrawn.

SECTION 103 REJECTIONS

Claims 1-56 were rejected under 35 U.S.C. 103(a) as being unpatentable over *Levitin et al.* ("information and distinguishability of ensembles of identical quantum states" 2001) (hereinafter *"Levitin"*) as evidenced by *Matzke, et al.* ("invariant quantum ensemble metrics" SPIE 2005). Applicant respectfully traverses this rejection.

The Examiner bears the burden of establishing a *prima facie* case of obviousness based on the prior art when rejecting claims under 35 U.S.C. §103. *In re Fritch*, 972 F.2d 1260, 23 U.S.P.Q.2d 1780 (Fed. Cir. 1992). Additionally, all limitations of the claimed invention must be considered when determining patentability. *In re Lowry*, 32 F.3d 1579, 1582, 32 U.S.P.Q.2d 1031, 1034 (Fed. Cir. 1994). Therefore, no *prima facie* obviousness rejection can be established if the proposed combination does not teach all of the limitations of the claimed invention. Furthermore, rejections based on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. *Teleflex Inc. v. KSR Int'l Co.*, 550 U.S. at l, 82 USPQ2d at 1396 (2007).

Of the rejected claims, Claims 1, 11, 21, 31-33, 37, 41, 45, and 46 are independent. The Examiner fails to meet his burden of establishing a *prima facie* case of obviousness based on the prior art at least because the Examiner fails to establish that the prior art discloses <u>all</u> the limitations of Claims 1, 11, 21, 31-33, 37, 41, 45, and 46. The Examiner appears to have generalized the "claimed invention as a whole" in determining patentability. *See Office Action* dated March 20, 2008; p. 4. In support of the Examiner's method for examining the claimed invention as a whole, the Examiner cites to MPEP § 1504.03 and § 2116.01. However, MPEP § 1504.03 appears applicable only to Design Patents. Further, MPEP § 2116.01 states "Interpreting the claimed invention as a whole requires consideration of <u>all</u> claim limitations." The Examiner fails to establish that *Levitin* discloses *any*, much less <u>all</u>, of the claim limitations

of Claims 1, 11, 21, 31-33, 37, 41, 45, and 46. For example, *Levitin* does not appear to disclose the claim limitations "imposing the plurality correlithm objects on the space to yield a combined point; <u>comparing an imposed correlithm object to the combined point</u>; and <u>recovering the imposed correlithm object in accordance with the comparison to impose at least one correlithm object token in a shared resource</u>, the at least one correlithm object token formed from a conversion of the number of bits and configured to reduce the inter-symbol interference between simultaneous agents during concurrent use of the shared resource" as recited in Claim 1 (emphasis added). Unless the Examiner can show that *Levitin* discloses <u>all</u> the limitations of Claim 1, general statements regarding the differences of the claimed invention as a whole and the prior art does not suffice to establish a *prima facie* case of obviousness. Accordingly, because the cited references do not appear to disclose <u>all</u> the limitations of Claims 1, 11, 21, 31-33, 37, 41, 45, and 46 and the Examiner has not established otherwise, the Examiner fails to meet his burden of establishing a *prima facie* case of obviousness of Claims 1, 11, 21, 31-33, 37, 41, 45, and 46.

Furthermore, the Examiner fails to meet his burden of establishing a *prima facie* case of obviousness based on the prior art because the *Matzke* reference does not appear to qualify as prior art. The *Matzke* reference appears to have been published on Mar 29, 2005[5]. The present application was filed on March 10, 2004. Thus, the *Matzke* reference does not appear to qualify as prior art. The MPEP under § 2124 provides an exception to the rule that the critical reference date must precede the filing date. MPEP § 2124 states that references which do not qualify as prior art because they postdate the claimed invention may be relied upon to show the level of ordinary skill in the art at or around the time the invention was made. However, this exception does not appear to be applicable in this case. First, the Examiner does not appear to rely on the *Matzke* reference to show the level of ordinary skill in the art. Instead, the Examiner appears to inappropriately rely on the *Matzke* reference to determine the difference between the claimed invention and *Levitin*. Second, the *Matzke* reference is not exemplary of the level of ordinary skill in the art because the *Matzke* reference is authored by the Applicant of the present application. The Examiner must ascertain what would have been obvious to one of ordinary skill in the art at the time the invention was made, and <u>not to the inventor</u>, a judge, a layman, those skilled in remote arts, or to geniuses in the art at hand. *Environmental Designs, Ltd. v.*

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[5] Published on Mar 29, 2005, source: http://www.matzkefamily.net/doug/

Union Oil Co., 713 F.2d 693, 218 USPQ 865 (Fed. Cir. 1983), *cert. denied*, 464 U.S. 1043 (1984), (MPEP, § 2141.03, "ascertaining level of ordinary skill is necessary to maintain objectivity")(emphasis added). Finally, the *Matzke* reference appears to have been published an entire year after the filing of the present application. Therefore, the *Matzke* reference does not appear to qualify as showing the level of ordinary skill in the art <u>at or around the time</u> the invention was made. For at least the reasons presented above, it does not appear that the Examiner may use the *Matzke* reference under the exception provided for in MPEP § 2124. For this additional reason, the Examiner has not established a *prima facie* case of obviousness. Accordingly, because the *Matzke* reference does not appear to qualify as prior art, and because *Levitin* does not appear to disclose, teach or suggest all claims limitations of independent Claims 1, 11, 21, 31-33, 37, 41, 45, and 46, the Examiner fails to meet his burden of establishing a *prima facie* case of obviousness of Claims 1, 11, 21, 31-33, 37, 41, 45, and 46.

The remaining set of claims depend respectively from independent Claims 1, 11, 21, 31-33, 37, 41, 45, and 46. For at least the reasons discussed above, independent Claims 1, 11, 21, 31-33, 37, 41, 45, and 46 are in condition for allowance; therefore, the remaining set of claims that depend respectively therefrom are also in condition for allowance. Accordingly, Applicant respectfully requests that the rejection of Claims 1-56 be withdrawn.

CONCLUSION

Applicant has made an earnest attempt to place this case in condition for immediate allowance. For the foregoing reasons and for other reasons clearly apparent, Applicant respectfully requests reconsideration and full allowance of all pending claims.

No additional fee is believed due. If, however, Applicant has miscalculated the fee due with this Response, the Director is hereby authorized to charge any fees or credit any overpayment associated with this Response to Deposit Account No. 3-4900 of Munsch Hardt Kopf & Harr, P.C.

Respectfully submitted,

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Date: April 29, 2008

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